

This is a RED Stamp

**ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL**

Manual No.: 5-21000-OPS-GT
Procedure No.: Table of Contents, Rev 34
Page: 1 of 3
Effective Date: 02/01/93
Organization: Environmental Management

**THIS IS ONE VOLUME OF A SIX VOLUME SET
WHICH INCLUDES:**

**VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)**

**TABLE OF CONTENTS
FOR VOLUME III: GEOTECHNICAL**

Procedure No.	Title	Rev. No.	Effective Date
GT.01	Logging Alluvial and Bedrock Material	2	05/12/92
DCN 92.01	Specialized Logging Form	2	11/13/92
DCN 93.01	Logging	2	01/15/93
*DCN 93.02	Logging Deliverables Standard Practices	2	01/25/93
GT.02	Drilling and Sampling Using Hollow Stem Auger Techniques	2	05/12/92
DCN 92.01	Superseded by DCN 92.03	2	07/27/92
DCN 92.02	Superseded by DCN 92.03	2	07/27/92
DCN 92.03	Addition of the Drum Characterization	2	07/27/92
DCN 92.04	Prevention of Down Hole Contamination	2	08/26/92
DCN 92.05	Field Modification	2	12/04/92
*DCN 93.01	Analytical Samples	2	01/25/93
GT.03	Isolating Bedrock from Alluvium with Grouted Surface Casing	2	05/12/92
DCN 92.03	Expired	2	09/03/92
GT.04	Rotary Drilling and Rock Coring	2	05/12/92

**DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R.B. HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991**

ADMIN RECORD

A-SW-001121

**ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL**

**Manual No.:
Procedure No.:
Page:
Effective Date:
Organization:**

**5-21000-OPS-GT
Table of Contents, Rev 34
2 of 3
02/01/93
Environmental Management**

Procedure No.	Title	Rev. No.	Effective Date
GT.05	Plugging and Abandonment of Boreholes	2	05/12/92
DCN 92.01	Field Modification	2	12/09/92
GT.06	Monitoring Wells and Piezometer Installation	2	05/12/92
DCN 92.05	Schematic Diagram Land Fill Methane Wells	2	06/04/92
*DCN 92.06	EXPIRED (replaced with DCN 93.01)		
DCN 92.07	Provide Consistency	2	12/17/92
DCN 93.01	Borehole Advancement	2	01/04/93
*DCN 93.02	Well Point Installation	2	01/28/93
GT.07	Logging and Sampling of Test Pits and Trenches	2	05/12/92
GT.08	Surface Soil Sampling	2	05/12/92
DCN 92.01	Clarification of Soil Sampling	2	09/03/92
DCN 92.02	Consistency Change	2	10/12/92
DCN 93.01	Work Plan Consistency	2	01/05/93
DCN 93.02	New Section-Surficial Profiling	2	01/15/93
*DCN 93.03	CDH Compliance	2	01/25/93
GT.09	Soil Gas Sampling and Field Analysis	2	05/12/92
GT.10	Borehole Clearing	2	05/12/92
GT.11	Plugging and Abandonment of Wells	2	05/12/92
GT.15	Geophysical Borehole Logging	2	05/12/92
GT.17	Land Surveying	2	05/12/92
GT.18	Surface Geophysical Surveys	2	05/12/92
DCN 92.01	Surface Magnetic Surveys Procedure	2	09/30/92
DCN 92.02	Modification to Stacking Requirements	2	10/15/92
DCN 92.03	Modification to Method of Taking Readings	2	10/15/92
*DCN 93.01	5.4 Field Procedure Revisions	2	01/25/93

**ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL**

Manual No.: 5-21000-OPS-GT
Procedure No.: Table of Contents, Rev 34
Page: 3 of 3
Effective Date: 02/01/93
Organization: Environmental Management

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
GT.19	Field Gas Chromatographs	2	05/12/92
GT.20	Procedures for Soil Interstitial Water Sampling and Sampler Installation	2	05/12/92
GT.21	Cone Penetrometer Testing	1	05/12/92
DCN 93.01	CPT Rods	1	01/15/93
GT.24	Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)	0	05/12/92

5873 2/4/93 This is a #22
CONTROLLED DOCUMENT
 EG&G - ROCKY FLATS PLANT
 ENVIRONMENTAL MANAGEMENT
 This is a RED Stamp

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS- GT.6, Rev. 2

Page 1 of 3

Title Monitoring Wells and Piezometer Installation			Date 01/28/93 1/28/93	DCN Number 5-21000-OPS- 93.02 ^{93.02}		
Expires 01/28/94 1/28/94			Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Scope Limitation Operable Unit Number 5 <i>None</i> 1/28/93						
Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)			
1	10	5.45 1/28/93	<p>Insert following text as Section 5.4.</p> <p>5.4 WELL POINT INSTALLATION</p> <p>This Section describes the procedures used for installing well points. Before installation, sites will be located, numbered, and identified using stakes (or paint sticks on paved surfaces). Refer to SOP GT.10, Borehole Clearing, for more information regarding clearing the sites of underground obstructions.</p> <p>After test sites have been located and cleared, an exclusion zone will be established according to the project Health and Safety Plan. The procedure for installing well points at a specific location is as follows:</p>			
Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above) <p><i>More cost effective method than piezometers installed by conventional drilling methods for measuring water levels.</i></p> <p>DOCUMENT CLASSIFICATION REVIEW WAIVER PER R.B. HOFFMAN, CLASSIFICATION OFFICE JUNE 11, 1991</p>						
Concurrence	Organization	Req	Date	Concurrence	Organization	Req Date
<i>[Signature]</i>	QAPM	X	1/29/93	<i>[Signature]</i>	User	X 1/28/93
<i>[Signature]</i>	EOM	X	1/28/93	<i>[Signature]</i>	USER	X 1/28/93
				<i>[Signature]</i>	EQS	✓ 1/28/93
Approval of Responsible Manager			Date	Is Posting Req'd?	If Yes, By What Date?	Date Posted
<i>[Signature]</i>			1/28/93	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	upon receipt	

DCN Form 001

JAN 29 1993

DOCUMENT CHANGE NOTICE (DCN)

(Continuation Sheet)

Page 2 of 3GT-6R2 DCN no. 93-02

Procedure no. 5-21000-OPS-GT.6, Rev. 2		Title Monitoring Wells and Piezometer Installation	
Scope Limitation Operable Unit Number 5			
Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	16	5.4	<p>1. Decontaminate the rig and downhole equipment. See SOP FO.3, General Equipment Decontamination, and SOP FO.4, Heavy Equipment Decontamination for specific details regarding decontamination.</p> <p>2. Set up the rig to obtain a thrust direction as close to vertical as possible.</p> <p>3. Advance threaded expendable point by either hydraulically pushing or hammering to desired depth.</p> <p>4. At locations within an IHSS, monitor the breathing zone near the rig for volatile organic compounds.</p> <p>5. Insert the end of the hand-perforated tubing (Polyethylene or Teflon) with a threaded stud attached into the probe rods. Thread this into the expendable drive point. Length of perforated tubing will range between one and five feet based upon magnitude of anticipated water level fluctuations.</p> <p>6. Hydraulically withdraw probe rods from hole.</p>
Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above) <i>More cost effective method than piezometers installed by conventional drilling methods for measuring water levels.</i>			

DOCUMENT CHANGE NOTICE (DCN)

(Continuation Sheet)

Page 3 of 3GT.6, R2 DCN no. 93.02^E

Procedure no. 5-21000-OPS-GT.6, Rev. 2		Title Monitoring Wells and Piezometer Installation	
Scope Limitation Operable Unit Number 8			
Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	16	5.4	<p>7. Place 10/20 silica sand filter pack to approximately six inches above the top of the screen while keeping tension on the tubing. Place at least six inches of granular bentonite seal above filter pack.</p> <p>8. Install four-inches long, one-inch diameter PVC casing with threaded or slip cap as protective well-point surface casing. Protective casing will be nearly flush with the ground surface.</p> <p>9. Install four-feet long, three-inch diameter steel post adjacent to protective casing to act as marker and traffic barrier. Post should be installed such that three feet are above ground.</p> <p>10. Develop well point with peristaltic or inertia pump. Since these well points are only for measuring water levels, it is not necessary to measure all the parameters referenced in SOP GW.4, Well Development.</p> <p>11. Survey top of protective casing because well-point tubing is too flexible. Refer to SOP GT.17, Land Surveying, for more information regarding site surveying procedures.</p>
Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above) <i>More cost effective method than piezometers installed by conventional drilling methods for measuring water levels.</i>			